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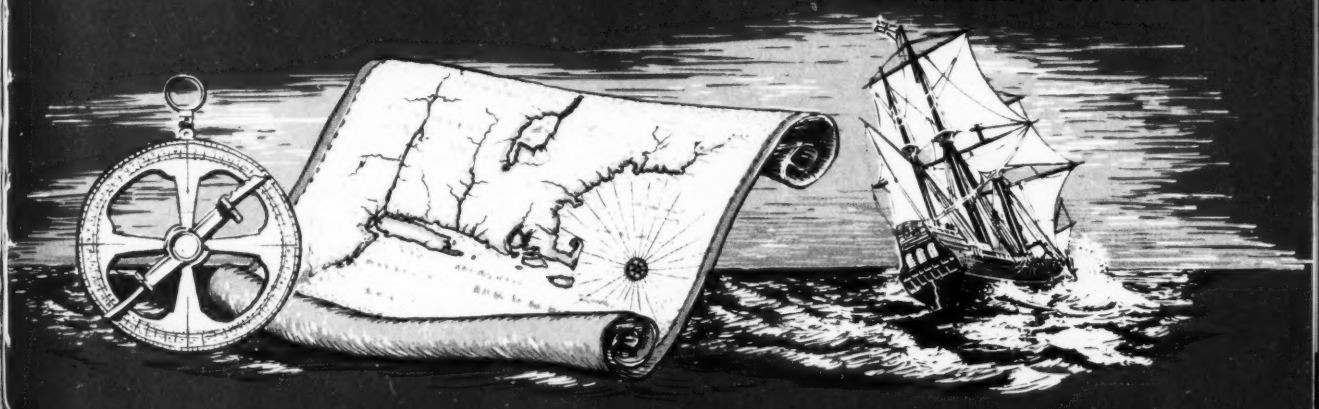

Earthquakes Spare No Favorites

Our Disabled: Miraculous Doers

Hunger Pangs in the Feastful Season

Auto-Accident Injuries Hurt!

It Started with 'Runaway' Steam

Bonfires We Can Do Without

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OUR COVERS

THIS THANKSGIVING season is fraught with prophecy of a space-age landing eclipsing the Plymouth Rock debarkation from the Mayflower 339 years ago this month. It may even have happened before this appears in print.

Out of a "Mayflower" satellite capsule (back cover) on some still unknown oceanic spot will step a pilgrimaging astronaut, giving witness to the fact that the Plymouth-point of outer space has been touched upon for the first time by man.

Our back-cover preview is made possible through the courtesy of the artist and the Crucible Steel Company of America.

Thus the spirit of the 1620 Mayflower sails on (front cover). Her likeness here is from an original in the Massachusetts Historical Society.

Contrasted with her two-ton titanium satellite counterpart, she was a frail vessel of a mere 180 tons capacity, storm-tossed in a two-month voyage. But she made the future possible for free men and women in freedom-blessed space. ⊙

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MOTHER EARTH IN AN UPROAR

Her quaking and gapping, as in Montana, could happen anywhere in the U. S.

HERE, IN PHOTOS exclusive to the *Journal of American Insurance,* is the awesome aftermath of "mountains falling headlong over hollow places," exactly as happened recently in the Montana earthquake.

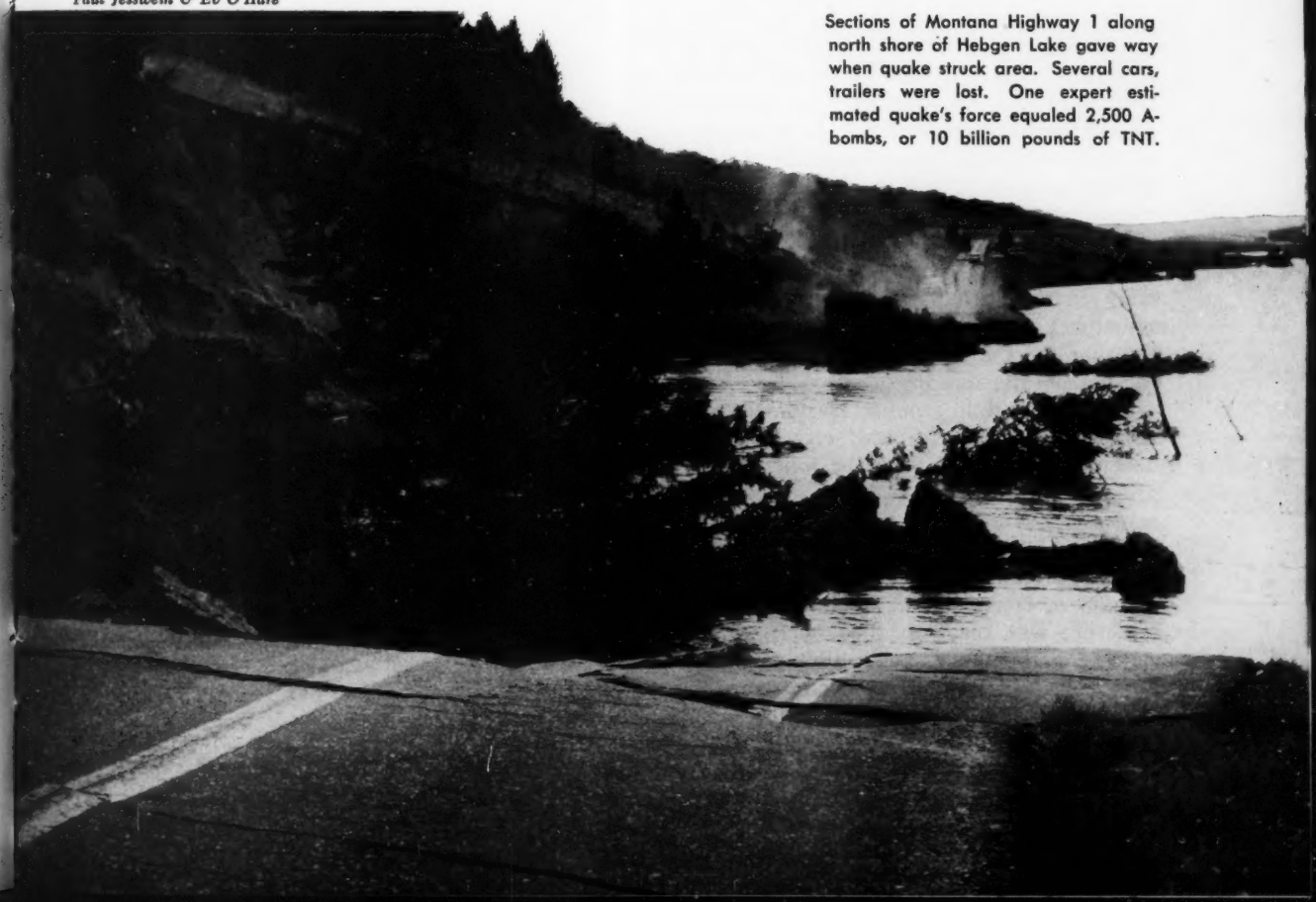
Surprising to most people, if not to the insurance world, is that similar devastation could happen anywhere in the U. S. In fact, earthquakes have occurred in every state but North Dakota and Wisconsin, and even these two have been shaken by quakes centering in adjacent areas.

The greatest U. S. earthquake in known history centered around New Madrid, Missouri, in 1811-12, and others considered among the worst ever known in the country occurred at Charleston, South Carolina, and in New England.

Not since the great San Francisco earthquake in 1906 has "the earth opened her mouth" with such fury in the U. S. as happened in Montana. The series of shocks that shook the area near Yellowstone Park rank as the third most powerful quake in U. S. history.

No one area has a monopoly on this frightening phenomenon of nature, although 80 per cent of the country's 700-odd yearly earthquakes strike in the West, particularly California. Dr. Charles Richter, professor of seismology at California Institute of Technology,

Paul Jesswein & Ev O'Hare



Sections of Montana Highway 1 along north shore of Hebgen Lake gave way when quake struck area. Several cars, trailers were lost. One expert estimated quake's force equaled 2,500 A-bombs, or 10 billion pounds of TNT.

says the five most quake-prone areas in the U. S. are California; northwestern New England and New York, near the St. Lawrence rift; a belt extending east from the central Mississippi valley through South Carolina and part of Georgia; the Rio Grande valley of New Mexico and southwest Texas, and a narrow belt extending through Montana, Idaho, Utah and Arizona.

Because the risk of earthquakes strong enough to damage even well-constructed buildings exists in all these regions, insurance protection exists there too. While 80 to 90 per cent of the estimated $5 million in earthquake insurance premiums written in the U. S. each year are written in California, insurers throughout the country stand ready to provide coverage, generally as a special endorsement to standard fire and extended coverage policies, whenever it is sought. Usually it is not sought until a quake has already occurred in an area and it is too late to protect against the losses; since coverage in most of the country is low in cost, based on past experience, it seems strange that it is not more widely used.

Quake-Resistant Building Helps Cut Losses

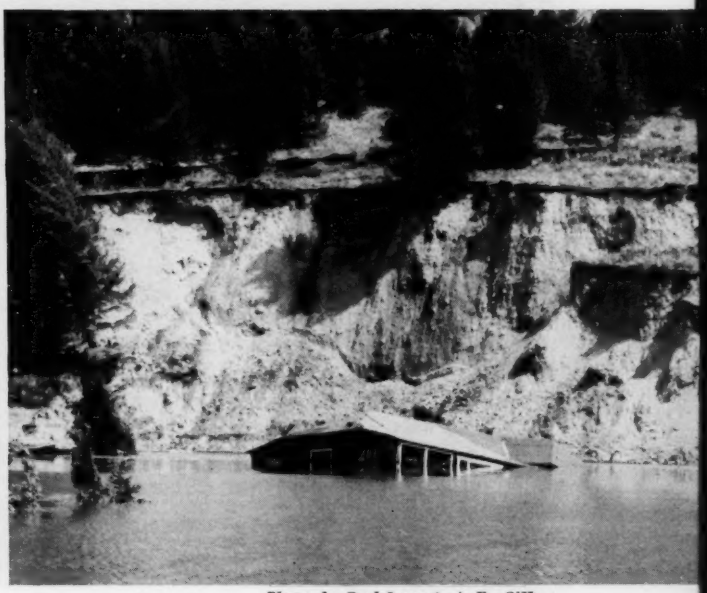
Since no one can predict when or where a quake will strike, insurers for some time have concentrated on getting loss prevention features built into new construction; for while earthquakes cannot be prevented, as fires and auto accidents could be, there are ways to minimize damage and loss of life. In California, state and city building codes prescribe "earthquake-proofing" measures; school design and construction have been regulated since 1933, and no school built since then has suffered more than minor structural damage in an earthquake.

Generally, the best built-in insurance against earthquake damage includes:

Building on solid ground. Manhattan is probably the most quake-proof city in the U. S. because the island itself is solid rock. Soft ground, particularly fill, is most likely to be severely shaken in an earthquake. Most dangerous of all is building partly on rock, partly on soft ground.

Unity of construction, so that all parts of a structure will react to the shock with equal rigidity or flexibility. False brick fronts, chimneys, cornices and other decorative features

Whole side of 7,600-foot mountain crumbled and slid onto Rock Creek campground below, covering nearly two-thirds. Main loss of life and personal property occurred here. Many cars, house trailers, tents, camping equipment were buried under slide and water it backed up. Water also covered vacation lodges, cabins left relatively undamaged by the quake and landslide.



Photos by Paul Jesswein & Ev O'Hare

Campers wait turn for two-by-two helicopter evacuation after escaping with their lives but losing nearly all possessions. They spent morning watching mud, water cover all that remained of campground. Property damage toll exceeded $11 million; 28 were believed killed. Losses would have been far greater had not quake occurred in sparsely-populated mountain area.

Lakeshore homes were in the lake after quake changed topography of area. Hole 7 miles long, 60 feet deep formed, filled with water to make new lake; a new cliff nearly half a mile high was thrust up, and a 300-foot mound of dirt and debris blocked Madison River. Authorities feared Hebgen Dam would give way, evacuated downstream town, ranches. But dam held.

must be securely anchored to the frame, and the frame to the foundation.

Good building materials, particularly mortar and plaster, and proper bracing of buildings.

Good design.

Structural engineers estimate that existing school buildings can be "quake-proofed" for 2½ to 3½ per cent of the building cost, business buildings up to six stories for 4 to 5 per cent. Incorporating quake-resistance features in the original construction costs less, and insurers have been in the forefront in supporting building codes that make this mandatory. They cannot help but think of the vast destruction that would result should an earthquake like those of New Madrid or San Francisco, or even one of far lesser intensity, occur in one of today's crowded metropolitan areas.

Though less publicized than the San Francisco disaster, the New Madrid quake ranks as one of the 20 greatest in the known history of the world. It shook at least 2 million square miles, and had more effect on the topography of the U. S. than any other quake in history. It altered 30,000 to 50,000 square miles of land, and created the "sunken country" of Missouri and Arkansas, where land sank 15 to 20 feet and turned into swamps and lakes.

Early Quake Shook Colonists Out of Boots

A Louisville resident counted 1,874 separate shocks. "The whole land was moved," he wrote, "and waved like waves of the sea . . . throwing up large volumes of sand, water and in some cases a black bituminous shale" to a height up to 40 feet. Severe shocks recurred for at least two years. On the Mississippi, banks caved in, islands disappeared, and many persons drowned. All the houses in New Madrid were thrown down or badly damaged, but because of the sparse population only one life was lost through falling buildings.

One of the earliest earthquakes recorded in the U. S., in 1638, reportedly shook the Plymouth colonists out of their boots. It was "a great & fearful earthquake," wrote Governor Bradford in his history of the colony. "It came with a rumbling noyse, or low murmure like unto remoate thunder . . . it was very terrible for ye time . . . ye earth shooke with ye violence," and the colony's chimneys came tumbling down. ⊙

THEY
THEIR
AND

Though disabled, these workers excel in quality craftsmanship, reliability and safety.

Though legless, Scotty ably performs a variety of jobs in Hughes plant engineering. Company officials testify that two legs, or one, or none make no difference; insurance rates are unaffected; the handicapped often are better risks.

HOLD OWN— MORE

NO ONE, according to a sage of long ago, could be more unhappy than a man who has never known affliction.

Today modern industry is writing a corollary to that in these terms: No one could be happier, produce higher quality workmanship or be more reliable and safer on the job than a man—or woman—afflicted with a physical handicap.

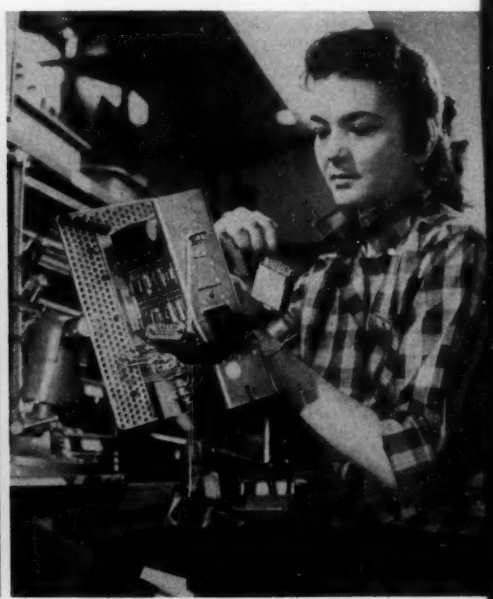
Proof positive and dramatic abounds in scores of plants throughout the country. At the Hughes Aircraft Company, in California, for example, an estimated 20 per cent, or about 6,000 of the 30,000 employees, have a physical handicap, visible or not. This company, as do a growing number of others, operates on the premise that the sole basis for employment shall be the applicant's ability and qualifications to do a job.

Nationwide, such policy has put millions of handicapped men and women back to useful work during the past 30 years or so. Included are one million and more victims of industrial accidents who have suffered permanent handicaps but have been returned to jobs.

Advocating and encouraging the re-employment of such men and women are the mutual casualty insurance companies. These insurers have, in fact, helped many policyholding companies develop a program for the placement of

This young lady, the fastest operator on her comptometer machine, was promoted to an accountant classification. Hughes has three one-armed typists, too, among its 6,000 handicapped workers who prove, "Ability is the real test."

Mind-power as well as manpower is being put to productive, rewarding use by this computer engineer who is wholly immobile except for slight use of his feet. Five years ago he was stricken with bulbar polio, resumed work in his respirator.



An electronic assembler, unhampered even if a one-leg amputee. A Hughes official said, "We have had no lost-time accident to a handicapped worker during 10 years nor have we had a compensation case under second injury."

They Hold Their Own—

these men and women. Experience proves that such employees, properly placed, have fewer accidents, fewer absences, fewer resignations and fewer discharges for cause than the average for other groups.

But what happens to workmen's compensation insurance premium rates in such cases? Contrary to what is occasionally assumed, companies writing workmen's compensation insurance have not increased the premium rates when physically handicapped persons are employed. In the first place, such rates are based on the experience within the class of business, modified in some cases by individual plant or business experience. Furthermore, there is no indication that total losses are increased when the physically handicapped are fitted into proper jobs. Serious second injuries to previously injured workers occur infrequently. If the employment of handicapped persons resulted in higher losses than normal, there could, of course, be a cost increase, but such has not been the case.

At the Hughes Aircraft Company, Justin Johnson, speaking for the firm, said, "We flatly state that a person with a physical disability is a much better risk than his so-called normal counterpart provided he is properly screened and placed and provided the company has an intelligent safety program."

Tom Gillick, a paraplegic who became a supervisor of insurance at Hughes, added, "We've found that it really doesn't matter whether a company's workers have two legs, or one, or none. Insurance rates are not influenced. In fact, many insurance companies consider the handicapped a better risk than their able-bodied co-workers."

Among the handicapped workers holding their own—and more—in Hughes jobs of research, development and manufacture of highly specialized electronic equipment are about 150 paraplegics, 200 leg amputees and 45 polio resi-

As a wire stripper and user of precision hand tools, Jimmy has few equals, though he is a cerebral palsy victim and might be mistaken for completely unemployable. A tribute to his cheerfulness: biggest birthday party in plant history.

Smiling Kenny added a love story to the Hughes saga, captivated a company nurse and made her his bride. She is a Hughes employment counselor. Kenny, post-polio, is a production planner with active interests in sports, entertainment.

A full life, supporter of a family of five children and chaplain of a blinded veterans group—such is the record of Wilson White, able structural assembler, blind since Italian campaign in 1944. White has scores of blind fellow workers.

duals in wheelchairs. In addition there are five totally blind, 120 industrially blind, 11 with cerebral palsy, 10 hemiplegics, 31 epileptics, about 30 with curvature of the spine and six arm amputees.

There are five quadriplegics, one triple amputee, several hundred with arrested TB, 250 with diabetes, 150 with heart conditions severe enough to be restrictive, about 40 deaf mutes, 80 totally deaf, five with multiple sclerosis.

No Insurance Claims Among 865 Handicapped

A eulogy to the safety-studded performance of these workers is the fact that the Hughes company in one recent year set a record of more than 10¼ million work hours without a lost-time accident. This broke the existing record of a little more than 4 million hours established 12 years earlier. The names of 865 of the more severely disabled employees have been checked against the insurance claims filed during the preceding year. There was not one claim from the group of 865.

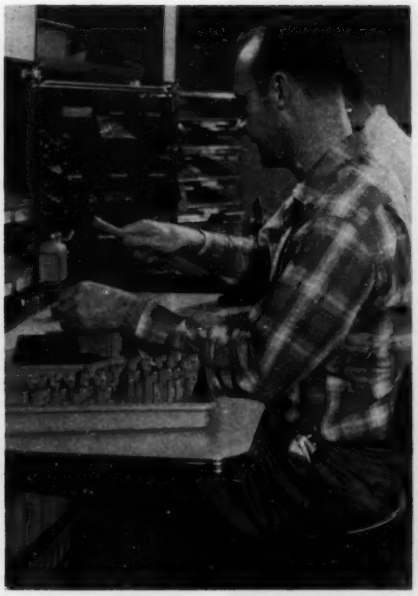
Any Hughes employee with difficulty in ambulation is assigned a parking space near the gate. The cafeterias are accessible to those in wheel chairs, as are portable lunch stands. Special lavatory equipment is provided. Otherwise, no special privileges are granted, nor are they sought.

Of first importance for a successful and satisfying experience in the hiring of the handicapped is an overall good safety program, in the opinion of Hughes' Justin Johnson.

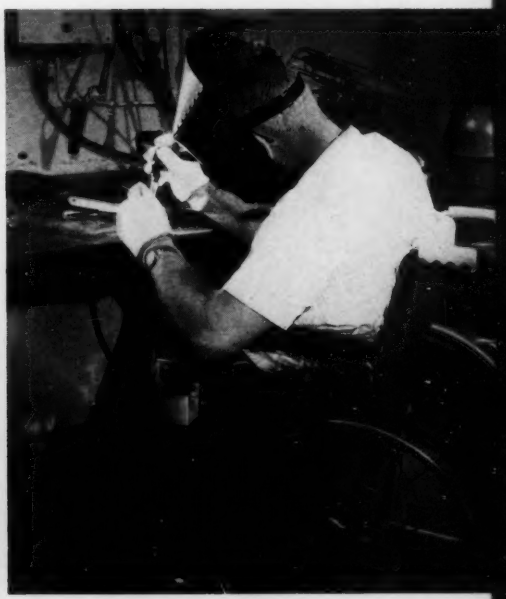
"Second, if not equally important, is the selective placement of the applicant with disability. And this, of course, means having a good pre-employment medical examination—not for the purpose of rejection, but to insure good placement and safety."

For their part, the Hughes' handicapped pictured here and the others in the corps can be justly proud of their performance record, proving dramatically as it does: "It isn't what you haven't got that counts; it's what you do with what you've got left." ⊙

Self-supporting and self-reliant, Tony Diaz, bowling from his wheelchair after hours at Hughes, went on to roll himself into the U. S. paraplegic bowling championship. His job: electronic assembler. Such workers seek no special privileges.



Totally blind, Howard Burton does terminal board assembly requiring a total of 68 operations with 28 parts and use of eight hand tools. Blind workers outdo others; they are distraction-free, have sense of feel in catching faulty parts.



A paraplegic and one-leg amputee, this hellarc welder introduced an innovation so effective that other welders then adopted the same improvement. He uses a hand throttle, not conventional foot-feed, thus holding his own—plus more.

Kemper Insurance

German freighter, certified free of pests, loads midwestern wheat at Chicago now that the Seaway is open. Cargo has double protection—mutual insurance against shipwreck, fire and water damage, and USDA vigilance against plant and animal stowaways.

U. S. Department of Agriculture Photos

Zoo animals, pets and livestock are held at a 52-acre quarantine station in Athenia, New Jersey, until USDA veterinarians make sure they are free of disease. The Columbus zoo and others use mutual insurance to protect valuable animals en route.

Swift air travel brings live insects and diseases to all parts of the nation in cargo and passenger baggage. USDA plant inspectors check everything, may order fumigation or seizure of all items that could infest U. S. crops, orchards or livestock.

WANTED: DEAD!

Destructive emigrant pests, dead or alive, are headed off with true insurance diligence.

STOWAWAYS are sneaking into the United States at the rate of 25,000 a year—and every one of them is potentially more destructive than a hurricane.

These are not human stowaways, but live insects and plant and animal diseases which could wreak havoc with U. S. crops and livestock. The U. S. Department of Agriculture reports insects alone destroy more than $3 billion worth of farm crops annually, and some of the ones now reaching our shores could prove even more disastrous if they ever gain a foothold.

The problem has increased enormously with the rapid growth of international air travel and the opening of the St. Lawrence Seaway, which have made nearly every part of the nation vulnerable to pests carried in cargoes, kitchen supplies, passenger baggage and garbage.

Ferreting out these destructive stowaways is the job of the USDA's plant and animal quarantine inspectors, who try to intercept them at the port of entry, and in some cases, before they even leave their foreign habitat. Their work is in the best traditions of mutual insurance, designed as it is to prevent loss and provide protection at cost.

Once established, plant and animal pests are difficult to destroy. The gypsy moth, a timber pest, has defied all attempts to eradicate it ever since it was introduced into New England in 1869 by an amateur entomologist who tried to crossbreed it with the silkworm moth. The oriental moth, a costly enemy of orchards, came over in the Japanese cherry trees that bloom each spring in Washington, D. C.

These and other pests have been with us a long time—the field mouse came over on the Mayflower—but the possibilities for damage are much greater now. Anthrax virus brought into Canada on the clothing of a German immigrant in 1951 cost the livestock industry half a billion

U. S. Department of Agriculture

Plant quarantine inspectors cut open a small percentage of imported garlic, chestnuts and other seasonal goods to look for moths, worms. Soil on roots may carry golden cyst nematode.

dollars before the disease was eliminated. Only this summer, a freighter entering the St. Lawrence Seaway was found to have on board some peanuts infested with the khapra beetle, an Indian insect, feared as the world's worst pest of stored grain. Plant inspectors in Cleveland ordered the entire cargo fumigated.

As a standard precaution, the USDA prohibits the entry of nearly all foreign meats and meat products except under very rigid requirements that most individual tourists could not meet. Some plants also are prohibited, and strict inspection is required for all fruits, vegetables, plant cuttings and seeds.

More than 1,000 plant and animal inspectors are now required to handle the job in 83 sea, air and rail terminals in the continental United States, Hawaii and Puerto Rico. In addition, some commercial plant shipments—including 450 million flower bulbs shipped annually from Holland, Belgium, France and Italy—are cleared abroad by U. S. inspectors.

Pests sometimes turn up in unexpected places. Shipments of small cars from abroad have been found caked with soil containing cysts of the golden nematode, a tiny root pest of potatoes and tomatoes. Souvenir items such as beads made of foreign seeds, hula skirts and Santa Claus dolls stuffed with cotton can harbor moths, rust spores and other pests.

"The problem becomes especially troublesome around Christmas time," says William R. Walton, principal assistant in the USDA's plant quarantine office in Chicago. "Passengers turn up with all kinds of things in their baggage, particularly food items that could wind up being fed to animals or discarded in a field."

Agricultural inspectors cooperate with U. S. custom officials and the Post Office Department in covering the ever-increasing flow of goods and people across our borders. During the past year, they inspected 132,877 planes, 57,371 ships, 21 million autos, more than 20 million pieces of baggage and 37 million mail packages. This giant screening process intercepted more than 25,000 lots of plant pests and 94,000 pounds of contraband meat.

As international trade expands, USDA inspectors also perform an increasingly valuable service to American farmers, millers, packers and other dealers in agricultural products by inspecting and certifying meats, grain, seed and vegetables to meet the import requirements of other states and foreign countries. Thus they insure shippers against clearance delays and help prevent the spread of U. S. pests.

In addition, the USDA's Plant Quarantine Training Center in New York City has trained 126 technicians from 36 other nations since 1951—a program that already has resulted in stricter quarantine laws and better enforcement in at least 11 countries. The returning technicians not only benefit U. S. agriculture by keeping pests away from our borders, but they also increase confidence in U. S. exports by espousing our high certification standards.

As fast transportation increases the danger of spreading plant and animal pests, it becomes increasingly important to promote quarantine controls on an international basis. The USDA's "men in gray," by contributing to this goal, are helping insure the future protection of our national food supply and natural resources. ⊙

Two Indonesian technicians learn plant quarantine methods at the USDA's training center in New York. U. S. State Department helps finance the program to aid the worldwide war on pests.

Animal inspectors give special attention to monkeys from New Delhi, used in preparing Salk vaccine. Precautions against stowaway pests include changing food and water in the cages.

U. S. Department of Agriculture Photos

The Library of Congress

FROM OUR ANNALS

THE MAYFLOWER COMPACT

—*November 11, 1620*

THANKSGIVING was to come later. First, before members of the Plymouth Colony ever came ashore from the Mayflower on that "stern and rockbound coast," they bequeathed to the New World the spirit of foresight for insurance against the hazards of the future.

This they did in the signing of the Mayflower Compact by 41 adults on November 11, 1620, in the cabin of their ship. Insurance as such was not mentioned, but "preservation," "our better ordering" and "furtherance of the ends aforesaid" were key words in the document.

Here was insurance foresight, indeed, for "first things first." What the Pilgrim leaders sought was protection and safeguards against the rebellious members of their own company. The landward risks and dangers of establishing "a faith's pure shrine" came later, to be underwritten in their own way.

Hence, as depicted in the scene shown here, the 41 adults signed the Compact, reading:

"In the Name of God, Amen. We, whose names are underwritten, the loyal subjects of our dread Sovereign Lord King James, by the Grace of God, of Great Britain, France, and Ireland, King, *Defender of the Faith & c.* having undertaken for the Glory of God, and Advancement of the Christian Faith, and the Honor of our King and Country, a voyage to plant the first colony in the northern parts of Virginia; do by these presents, solemnly and mutually in the Presence of God and one another, covenant and combine ourselves together into a civil body politic, for our better ordering and preservation, and furtherance of the ends aforesaid; And by virtue hereof do enact, constitute, and frame such just and equal laws, ordinances, acts, constitutions, and offices, from time to time, as shall be thought most meet and convenient for the general good of the Colony; unto which we promise all due submission and obedience. In witness whereof we have hereunto subscribed our names at *Cape Cod* the eleventh of November in the reign of our Sovereign Lord King James of England, France, and Ireland, the eighteenth and of Scotland, the fifty-fourth. *Anno Domini* 1620."

Thus 339 years ago this month our Pilgrim forefathers established the principle of government "by the will of the majority," which has proved to be insurance of sterling and lasting quality ever since. ⊙

Help may be in time to save Indian child from starvation; he gets milk at Nilfouer hospital, Hyderabad. About half of world's people get almost no protein in diet; U. S. surplus milk helps alleviate that for many. UNICEF can ship it at cost of one cent per five glasses.
UNICEF

'HOLIDAY SEASON' IN A HUNGRY WORLD

MANKIND'S NOBLE BENEFACTOR

America's most venerable insurance forebear and advocate —Benjamin Franklin—set the world example in amelioration of the conditions of humankind. No less an authority than Mirabeau, French orator and revolutionary leader, credited him with doing more than any other philosopher to extend the rights of man across the earth.

Like Roberto Giraldo in this Journal story, Franklin suffered the loss of a beloved son—by smallpox. His subsequent efforts to bring relief to ill and needy people still stand as one of the finest monuments to his memory.

In tribute, George Washington wrote to him: "If to be venerated for benevolence; if to be admired for talents; if to be esteemed for patriotism; if to be beloved for philanthropy, can gratify the human mind, you must not have lived in vain."

Young malnutrition victim cries bitterly in Sassoon hospital, Poona, Bombay, one of many receiving aid from UNICEF, World Health Organization, other agencies. Ignorance about proper feeding often causes malnutrition.
UNICEF

CARE Photos

CARE's school lunch program gives Bolivian child much-needed protein in diet. In Panama town, program raised attendance 45 per cent; pupils had been too hungry to go to school.

"IN THE CENTER of the Plaza de Bolivar of this city," read the story in Bogota, Colombia's, leading daily, *Intermedio*, "a child died in his father's arms yesterday at about 10 a.m.

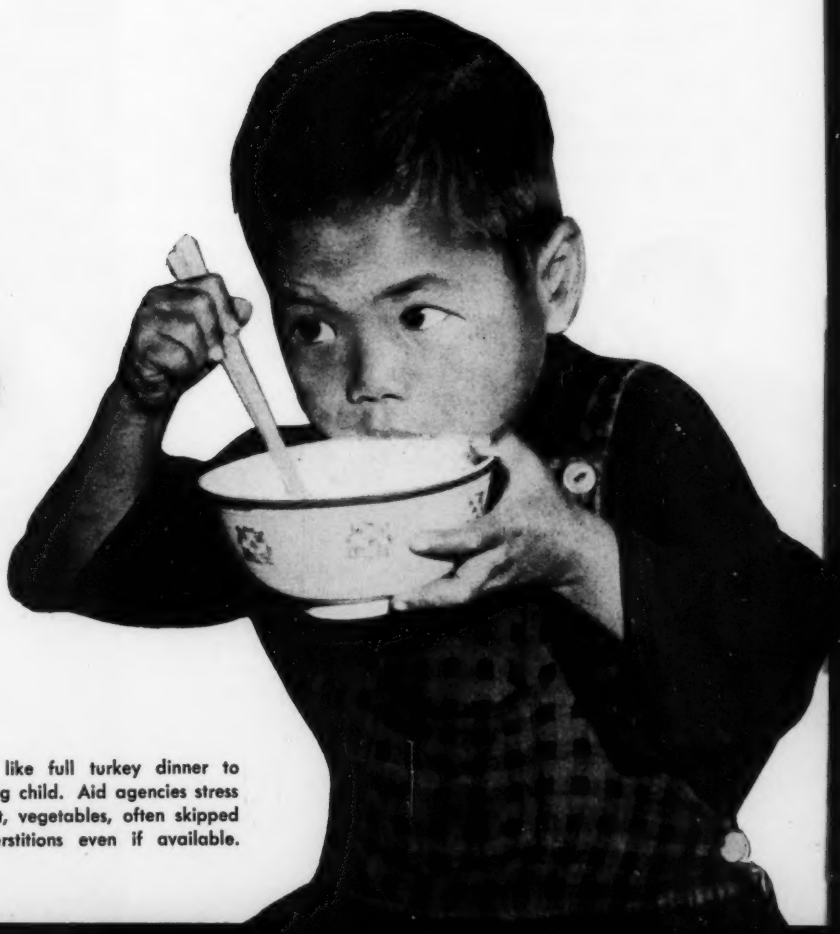
"He was Anibal de Jesu Zapata, 5, a son of Roberto and Matilde Giraldo de Zapato, a poor farm couple who were walking through the streets with their five children in search of some help to survive. . . .

"The sorrowful father told newspapermen that his little son had died of hunger, since he had been out of work for many weeks and his family had had nothing to eat for several days."

From other parts of South America, from India, from Africa and Asia, from all corners of the world this Thanksgiving season come similar reports so tragic as to possibly unsettle, for a moment at least, contented Americans pushing back from their holiday tables.

Americans find it hard to realize that there are 1,700,000,000 people in the world today who do not have enough to eat. There are 750 million children in the underdeveloped countries of the world who are underfed.

Three children are born in the world every second—nearly 260,000 a day. One-fourth die in infancy. Malnutrition is a major cause; it also weakens resistance to disease. Two-thirds of



Bowl of rice is like full turkey dinner to hungry Hong Kong child. Aid agencies stress use of meat, fruit, vegetables, often skipped because of superstitions even if available.

the world's children who survive infancy never reach adolescence. Only one in four reaches old age—and "old age," to much of the world, averages 38 years, most of them filled with hunger and disease.

Governments, UN agencies, private organizations, individuals, are doing what they can to help, with a spirit of brotherhood and a wish to help insure world peace. The U. S. government has given millions of tons of surplus foods to hungry nations. The United Nations Children's Fund (UNICEF) has shipped nearly a billion pounds of surplus dried milk to protein-starved children all over the world. Thousands of people buy UNICEF Christmas cards to help pay for the shipping; children ask that Hallowe'en "tricks or treats" be pennies and dimes for the cause. Other citizens send CARE packages, give clothes and supplies through their churches or overseas relief agencies. Many have "adopted" orphan and refugee children through the Foster Parents' Plan, Save the Children Federation or other private aid organizations.

Many agencies, taking the long-range view, are helping underdeveloped countries to help themselves by building food and milk processing plants, teaching mothers about nutrition and health, improving agriculture, training doctors and nurses, bringing vaccine and penicillin to the masses ravaged by malaria, leprosy, yaws and TB—and teaching them to use them. But Thanksgiving will come and go with still much to be done. ⊙

CARE

Children of Ukrainian couple who fled Communism stay healthy with aid of gift CARE packages in West German refugee camp. Three million Germans, many DPs have fled East zone since 1945; thousands still live in temporary camps in West zone.

FOR CERTAIN

A new and growing kind of insurance helps assure Thanksgiving birds aplenty.

NIKITA KHRUSHCHEV and the U. S. are together on at least one thing: The more turkeys Russians and the U. S. raise, the better off the whole world will be. Or so he said while visiting the USDA's Agricultural Research Center.

Any diminution in turkeys he's against. Chiding us about American-bred small turkeys, he said, "That's what you get for being so rich and so fat—you start looking for small turkeys."

If more turkeys are what the unpredictable Soviet premier relishes, the U. S. has them in a record crop of some 82 million birds. Though by far the largest increase—26 per cent—lies in lightweight gobblers, overall totals favor the Khrushchev partiality to big birds. U. S. 1959 output of heavy breed turkeys will hit around 66½ million; light breed turkeys produced will number near 15½ million.

Allied in this record effort, mutual insurance is providing essential protection for all-time high investments in turkey raising. At least half of all U. S. turkeys are insured. Some two-thirds of those covered are protected by Farmers Mutual Hail Insurance Company of Iowa, reports President Max D. Rutledge. "In 1959, as last year, we're insuring in excess of 26 million turkeys," says Rutledge, "some 6 million in Minnesota, 3 million in Iowa, 2 million in Virginia and Wisconsin each, and lesser numbers in 36 other states."

Necessity of financial safeguards for the $350 million U. S. turkey industry is summed up by M. C. Small, executive secretary of the National Turkey Federation: "With a grower investment of $3 to $5 per bird, insurance is important. Most turkeys are raised in very large flocks, ranging from 10,000 to 100,000 birds; this means an investment of from $30,000 to $500,000 in out-of-pocket costs, not including labor."

A catastrophe 19 years ago this month is cited by Farmers Mutual's Rutledge as setting the stage for nationwide turkey protection. Disastrous losses were suffered in the 1940 Armistice Day blizzard, convincing many observers that turkeys couldn't be successfully insured.

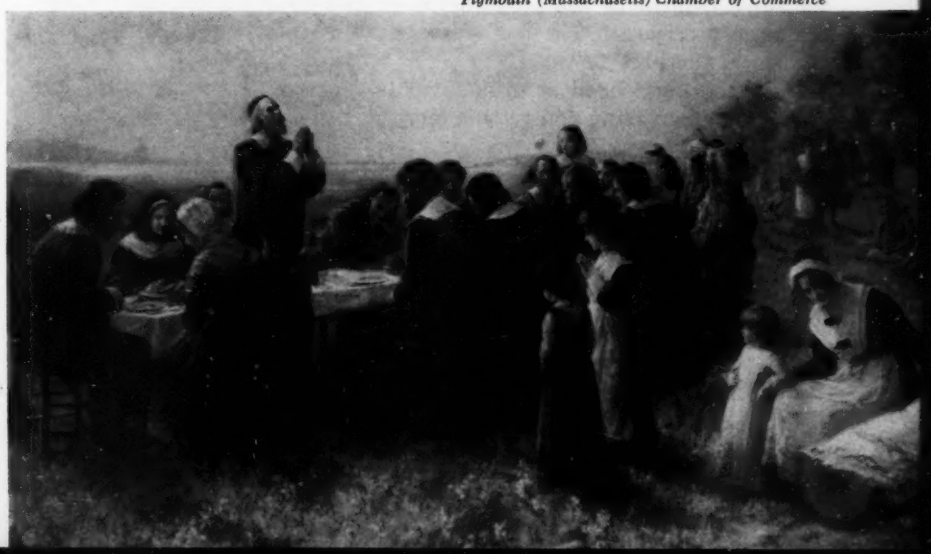
However, turkey policy pioneer W. J. McGladrey, whose firm, Farm Owners Mutual of Minnesota, had been experimenting with the coverage, put forth renewed efforts to find a workable program. Other key men in the search were Wisconsin turkey expert A. H. Trask and NTF Secretary Small, both of whom agreed with McGladrey that turkeys had to be insured on a different basis than other livestock. The big breakthrough came following another vicious blizzard in 1943, when a geographic rating plan was developed based on experience gained in flock location and susceptibility to loss.

Turkey insurance today protects growers against fire, storm, explosion, flood and transportation hazards. Main dangers not covered are disease and predatory animals. "Rates vary from 2 to 11 cents per turkey, depending on coverage and territory," says Rutledge. "Losses in 1958 were about normal, but this year are running about 25 per cent higher owing to unusual fire losses on confined turkeys and severe losses from rain on ranged birds." ⊙

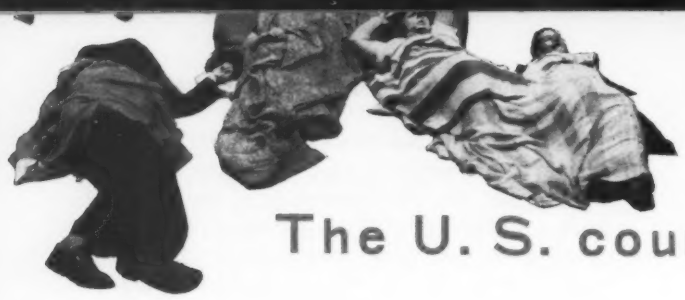
←

U. S. inland marine insurance premiums in 1959 will include some $2 million for turkey protection. Raised in flocks of up to 100,000 birds, calling for investments as high as $500,000, U. S. turkey crop offers a unique farm insurance risk. *National Turkey Federation*

Plymouth (Massachusetts) Chamber of Commerce



The Thanksgiving turkey tradition began here, with the four wild birds which were served to the Pilgrims and their guests. This version of that historic feast is a Jenny Brownscombe painting, done around the year 1900.



The U. S. counts its injury losses i

4,702,000 *Persons Injured in a Single Year (July 1957—June 1958)*

QUESTIONABLE "proof" of improvement in the nation's highway accident-death orgy may be boobytrapping us into overcomplacency—especially on the accident-injury situation.

A shocking total of 4,702,000 persons a year are being injured in motor vehicle accidents. This is revealed in the first figures of their kind available for a number of years. They are official, gathered and released by the U. S. Department of Health, Education and Welfare.

This newly reported total is almost 3½ times the nonfatal motor vehicle injuries reported for 1958 by the National Safety Council. True, the HEW figures include any accident in which a motor vehicle was involved. But even if the one-third fractional figure of the NSC is accepted, the auto accident-injury toll for a single year is greater than the sum of the nonfatally U. S. wounded in the eight principal wars in the 184 years of U. S. history.

What the public more often hears—and remembers—is to the effect that "the highway death rate per 100 million miles of travel has shown a steady decline." Or, "The nation's highest annual traffic fatality total of 39,969 was reached in 1941 and has never been equaled since. . . ."

Here's a hard, cold fact: Automobiles killed more people during each of the first six months of 1959 than they did during the same months of 1958. Furthermore, the auto death rate per 100,000 of population has shown only a small fractional change in the past 10 years.

Too often overlooked or discounted is that traffic accident injuries are increasing and getting more costly—insurance-wise and every other way.

Total cost of motor vehicle accidents in 1958 is reported by the NSC as $5.6 billion. That's on the basis of only 1,350,000 nonfatal injuries. A more realistic cost—with far-reaching effects on automobile insurance rates—looms up in the magnitude of the 4,702,000 injured persons in one year's motor vehicle accidents, based on the HEW figures. ⊙

HARDEST-HIT YEARS: 25-

HARDEST-HIT PLACES: UR

HARDEST-HIT INCOMES: $

es in MOTOR VEHICLE ACCIDENTS

ARS: 25-44

(Total persons injured, by age groups)

25-44 YEARS
1,669,000

15-24 YEARS
1,214,000

45-64 YEARS
1,081,000

5-14 YEARS
323,000

65 AND OLDER
296,000

LESS THAN 5 YEARS
120,000

ACES: URBAN

(Total persons injured, by residence)

URBAN
2,668,000

RURAL NON-FARM
1,398,000

RURAL FARM
636,000

COMES: $4,000-$6,999

(Total persons injured, by income levels)

$4,000-$6,999
1,680,000

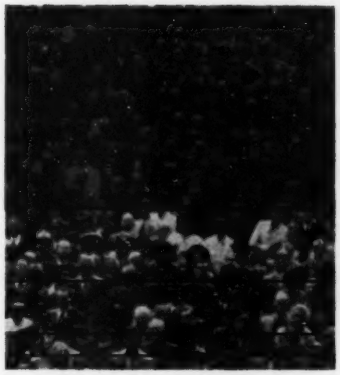
$2,000-$3,999
947,000

$7,000 AND MORE
905,000

LESS THAN $2,000
721,000

UNKNOWN
449,000

HARDEST-HIT FIELDS OF ACTIVITY: WORKMEN



(Total persons injured, by major activity)

WORKMEN
2,664,000

STUDENTS
935,000

HOMEMAKERS
684,000

RETIRED AND OTHERS
255,000

PRE-SCHOOL
164,000

WORST EFFECTS:

MEDICALLY ATTENDED INJURIES
4,133,000 persons

ACTIVITY RESTRICTED
at least one day—
3,004,000 persons
92,000,000 restricted activity days

IN-PATIENT HOSPITALIZATION
890,000 persons

LOST TIME FROM WORK
989,000 persons
32,100,000 work-loss days

LOST TIME FROM SCHOOL
427,000 persons
900,000 school-loss days

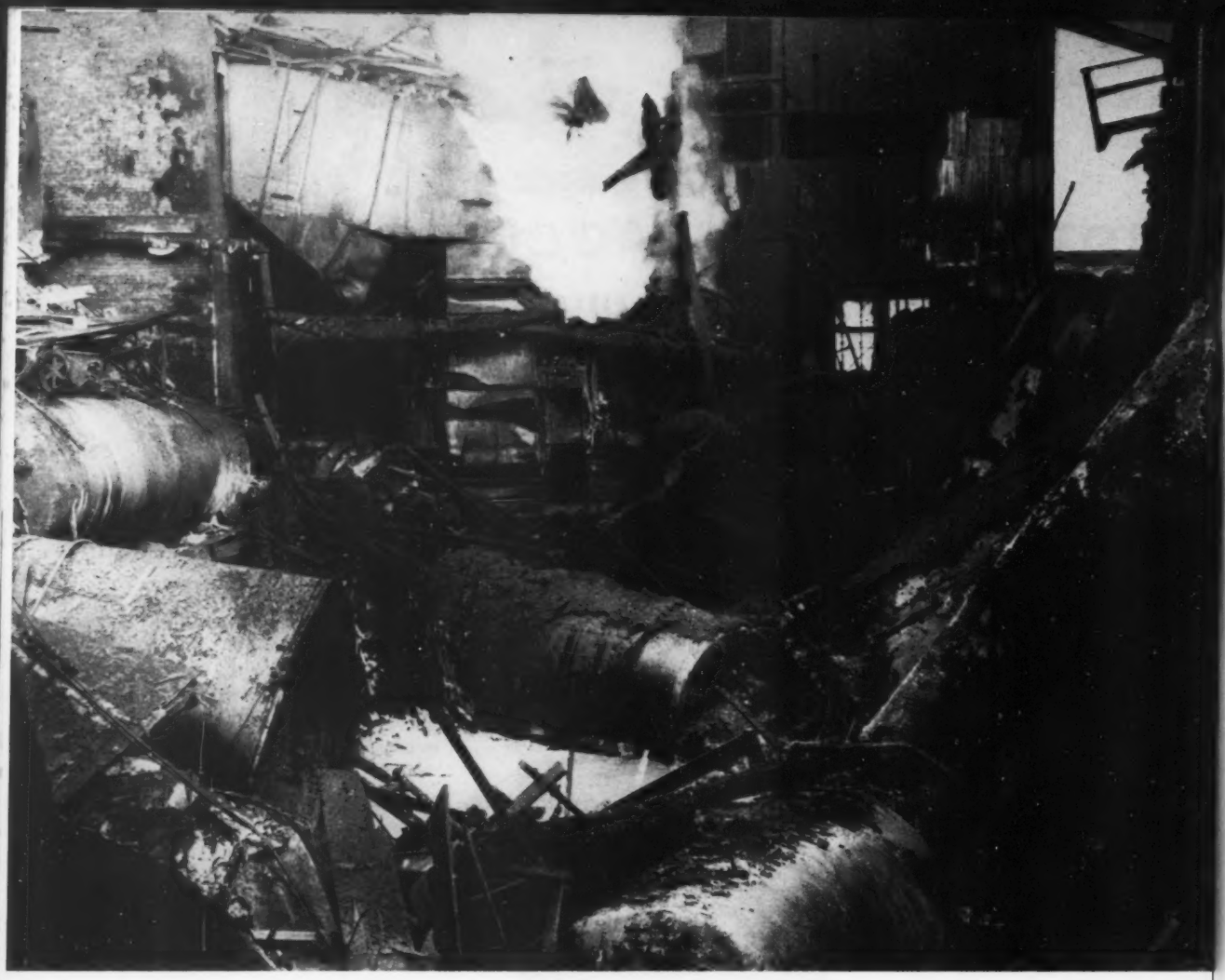
NO ONE IS SPARED

Traffic-accident injuries are increasing alarmingly although the fatality ratio is improving or remaining constant.

Traffic-accident injuries are becoming more costly.

Traffic-accident injuries seriously affect everyone through insurance rates or otherwise.

Source: U. S. Department of Health, Education and Welfare, Public Health Service



Boiler and machinery losses can be frightening. A pulp digester in this paper mill wrecked several others when it blew up so mightily that not a trace of it remained.

Many relatively small direct property damage losses result in large losses for interrupted use of facilities. High losses of recent years reflect inflation and industrial trend toward insuring more in keeping with modern-day loss potentials.

BOILER AND MACHINERY LOSSES IN EXCESS OF $50,000

(All carriers 1949-1958)

YEAR	NUMBER OF LOSSES	DIRECT DAMAGE	INDIRECT LOSSES	TOTAL LOSSES
1949	9	$ 309,907	$ 667,169	$ 977,076
1950	8	594,636	568,160	1,162,796
1951	28	1,327,513	1,655,039	2,982,552
1952	20	1,414,960	1,000,716	2,415,676
1953	20	1,370,403	983,805	2,354,208
1954	16	762,331	811,971	1,574,302
1955	21	1,114,187	2,270,698	3,384,885
1956	35	1,467,715	2,602,652	4,070,367
1957	54	4,205,239	7,272,720	11,477,959
1958	27	2,511,865	2,270,535	4,782,400
10-year totals	238	$15,078,756	$20,103,465	$ 35,182,221
Average loss per accident		$63,356	$84,468	$147,824

Source: Mutual Boiler and Machinery Insurance Company

THE POWER BACK OF POWER PLANTS

Engineering and insurance stand guard over huge stakes in boilers and machinery.

WILD-EYED SPECULATION about recurring flying saucer "sightings" is reminiscent of "'way out" solutions offered to the Great New England Explosions Mystery in 1860.

On the eve of the Civil War, steam was king —and a cruel one. Boilers had replaced fast-running New England streams as the chief source of industrial power, and were "unexplainably" blowing sky-high at an alarming rate—about one every four days. Property, injury and death tolls made steam power a costly step forward.

It took years of hard-fought insurance pioneering to rout the boiler-hazzard bogy for Yankee textile mills, paper plants and other steam users. But final success helped make possible the multi-billion-dollar array of equipment powering American industry today.

Sizable and significant among examples of this insurance-manufacturer partnership was an accident that occurred in 1946. A dryer roll on the world's largest paper machine exploded, halting manufacturing operations. Final insurance payments: $300,000 for direct loss and $3,651,498 for loss of production. A big factor in the size of the latter figure was the fact that the only manufacturer able to replace the damaged equipment was strike-bound.

Fortunately, insurance-developed loss prevention techniques keep most such catastrophes from ever happening. The personnel responsible for forestalling these disasters are armed with engineering degrees, electronic tools and research facilities such as the Mutual Boiler and Machinery Insurance Company research laboratory, established in 1940.

Just a few of the Mutual Boiler lab's contributions have been: the development of techniques for guarding against cracking of paper machine dryer heads; determination of stress safety factors for welded pressure vessel heads; the use of electronic inspection procedures for measuring plate thickness so that erosion can be checked without drilling holes.

The whole boiler and machinery insurance saga started in Hartford, Connecticut, when a handful of engineers met in 1860 to solve the era's enigmatic explosions by scientific means—

"scientific," because too much unscientific thinking had already been done. From the man-on-the-street to the technical literature of the day, fantastic theories abounded on the unfathomable boiler failures.

Behind all the 1860 "saucertalk" lay the belief that under certain circumstances, "irresistible" forces were generated in a boiler and from then on, *nothing* could stop an explosion.

The engineers, who were members of the Polytechnic Club of Hartford, saw nothing supernatural in the catastrophes. But they agreed that 100 pounds of steam pressure per square inch (then very high) was a dangerous force meriting respect, careful handling and full technical comprehension.

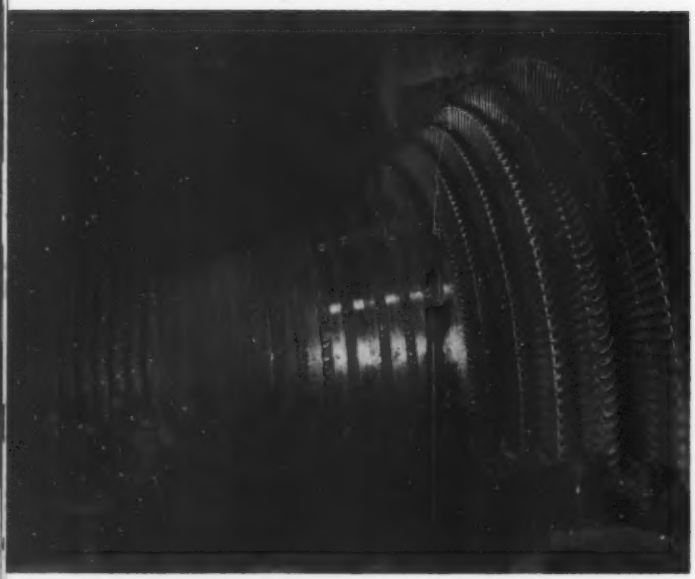
The Civil War slowed down the Polytechnic's progress. In 1865, public demands for curtailment of steam power reached a pinnacle when the Mississippi steamer *Sultana* went down with 1,200 of the 2,000 passengers aboard. All of the ship's boilers had blown up simultaneously. Shortly after peace between the states prevailed, the Polytechnic resumed action.

Reasoning that trained inspectors could spot loss causes in the making, the engineers organized a company to furnish boiler inspection service, and backed up their offer with a guarantee to pay for damages caused by explosions of inspected boilers. Their firm, The Hartford Steam Boiler and Inspection Insurance Company, was incorporated in 1866 and, in 1867, issued the first U. S. boiler policy.

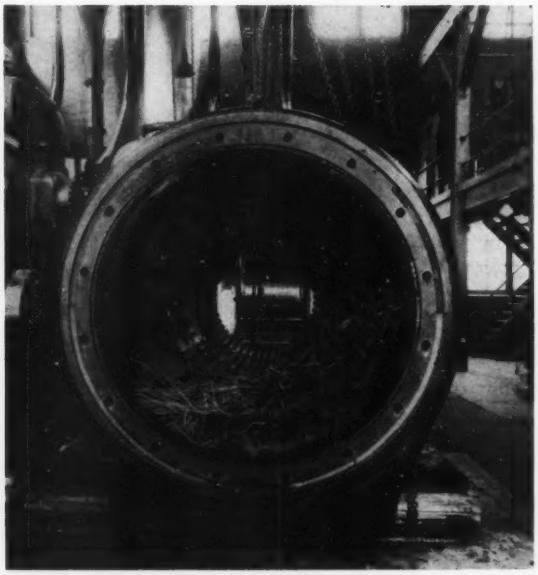
First Mutual Casualty Company Formed

Not long afterwards, the first U. S. steel boiler was built in Massachusetts, in 1874. With industry expanding and steam pressures being raised to 125 and 150 pounds per square inch, the need for additional boiler inspection and protection facilities swelled. In 1877, the Mutual Boiler Insurance Company of Boston was formed by the textile and paper manufacturers who earlier had organized the loss prevention-oriented Associated Factory Mutual Fire Insurance Companies. The new firm was the first mutual casualty company in the U. S., and remains today—under the name of the Mutual Boiler and Machinery Insurance Company, Waltham, Massachusetts — the only mutual protecting power equipment exclusively.

Mutual Boiler and Machinery Insurance Company Photos



Typical of power equipment losses guarded against by boiler and machinery insurance is the damaged blading on this 3,600-rpm steam turbine spindle in a Louisiana container factory.



Costly damage to this 2,000-kilowatt turbo-alternator might have been avoided with timely loss prevention engineering. One insurance firm alone makes 250,000 inspections a year.

The underlying approach of these pioneering insurers was — as it is today — prevention of accidents not only through inspections but by insurance-sponsored improvements in equipment design and manufacture. A beneficial by-product resulting from technical information developed by insurance engineers has been improvement of operating efficiencies.

With the rapid introduction of new kinds of machinery, it was inevitable that by manufacturers' demand, early boiler protection eventually was to widen into full-fledged power plant coverage. In 1928, a variety of industrial policies—business interruption, flywheel, electrical machinery and other coverages—were combined into today's boiler and machinery protection. This segment of the insurance industry last year recorded net premiums of $72½ million, written by some 20 U. S. insurers.

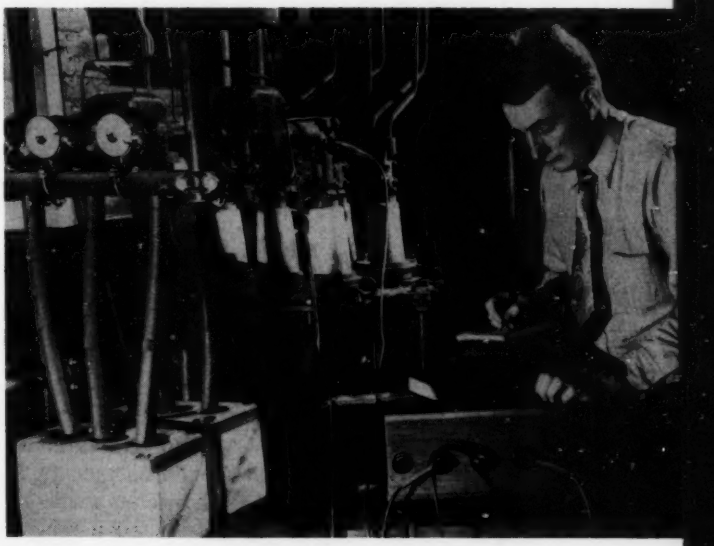
Atomic Age Presents New Protection Needs

Today's boiler and machinery risks are as diversified and immense as American industry itself. Mutual Boiler, for example, insures the heating and air conditioning equipment of the United Nations building in New York, a policy about which Mutual Boiler Vice President Edwin B. Pease comments pointedly, "You can understand the importance of preventing failure of any of this equipment." Appropriately, in the atomic age, Pease's firm also recently insured against equipment breakdown in a nuclear power plant built for the Army.

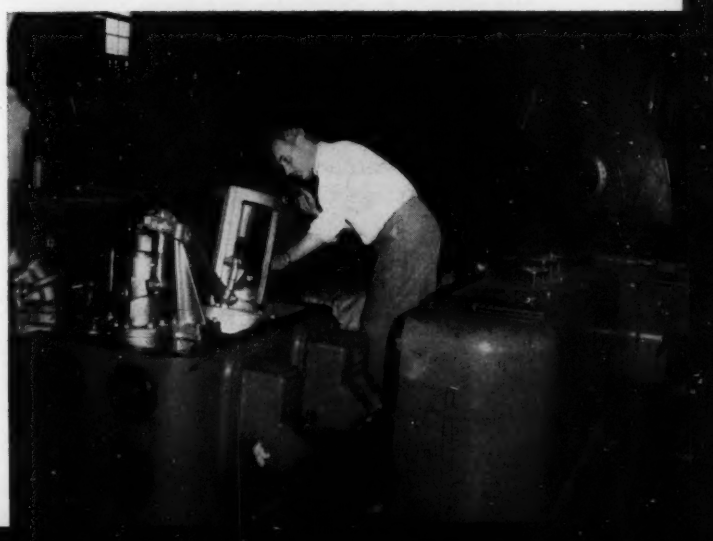
Limits of today's insurance protection would no doubt stun its early founders, as would modern steam pressures. Mutual Boiler currently has policies in force wherein the total coverage hits $26 million for any one accident. With these, protection extends as high as $360,000 for each day of total production loss.

Though modern methods and equipment are steadily more effective in helping curtail industrial power plant losses, man's imperfections remain a mystery, perpetuating the need for safeguarding boilers and machinery. Speaking from 30 years of experience, Mutual Boiler's Pease reflects: "A very high proportion—perhaps 50 per cent—of the accidents in this field are the result of human, not mechanical, failures." ⊙

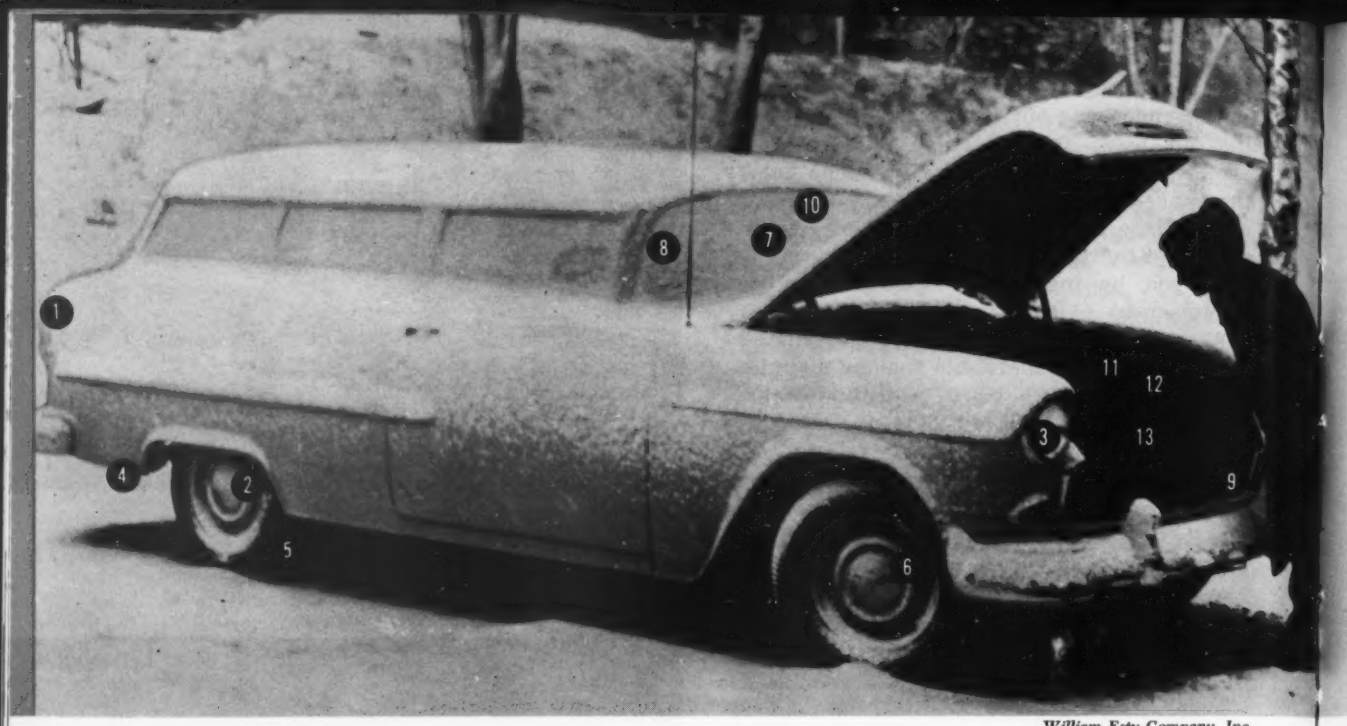
Ultrasonic testing is a modern loss-prevention technique for locating internal defects in metals and other materials. An engineer checks a steam turbine shaft with a Reflectoscope.



Insulation is the most vulnerable part of an electrical machine. It requires regular visual inspections and insulation resistance tests using special equipment to detect hazards.



Dismantled inspection of blading of a 50,000-kilowatt steam turbine rotor. Too often, users fail to proceed with dismantled inspections until too late—after the breakdown.



William Esty Company, Inc.

TOO MANY 'SICK' CARS

With winter hazards imminent, at least 21½ million motor vehicles need inspection and overhauling.

NOT EVEN a John "Bet-a-Million" Gates would be likely to gamble on odds such as face U. S. motorists during the coming winter months.

Some 21½ million "sick" cars—too defective in one way or another to pass a standard inspection—will be on the highways. That's one out of every three cars coming down the road, an estimate based on actual figures from 10 states and District of Columbia, all having compulsory periodic motor vehicle inspection.

Put those cars—or even sound cars with safe drivers — in the freezing temperatures, the stormy weather, the lengthened hours of darkness and the snow and ice of winter driving; the gamble with accidents, death, injuries and property damage would gag even a Gates.

To stack the odds even higher, three of the year's biggest holidays—Thanksgiving, Christmas and New Year's—are coming up.

Motorists and their insurance rates are in for a beating, unless the history of previous winters is reversed.

Vehicle failures accounted for nearly 14 per cent of all turnpike accidents in a recent study sponsored by the Pennsylvania Turnpike Commission. Vehicle condition is the key factor in all breakdowns on the highway regardless of whether the breakdowns result in accidents.

There's no new foolproof patent that will protect autoists, despite the fact that it is all of 80 years since George B. Selden took out the first auto patent. The best that owners can do is keep their cars in perfect shape—and there are only two ways to do that, according to automotive engineers and mechanics: (1) Put the car in dead storage; or (2) find a good mechanic and get the car properly inspected and winterized.

By doing the latter, every motorist can do something constructive in the interests both of lowered insurance rates and of safety.

For 32 years some states have tried to cope with the problem through compulsory or quasi-compulsory periodic motor vehicle inspection, but the plan has serious limitations.

It should never be undertaken, safety experts say, until the state or municipality has success-

"HEALTH INSURANCE" FOR CARS - AND DRIVERS

1 REAR LIGHTS
More than one-fourth of all items discovered unsafe on cars and trucks are rear lights. Check-ups might well start here, for that safer dark-months driving.

2 BRAKES
Faulty, uneven brakes make skidding worse. Fluid level — and no leaks — are life-death important in power brakes. Front brakes usually go before rears.

3 FRONT LIGHTS
Even a weak bulb can lead to hazardous, emergency-condition driving, worsened by winter. Turn signals, stop and parking lights must be clean, working, too.

4 EXHAUST SYSTEM
Carbon monoxide fume hazards are higher in winter, with more closed-window driving. For safety: tip-top shape for the exhaust system, a slightly-open window.

5 TIRES
No car is safer than its tires; poor pressure, cuts, imbedded pick-ups and worn tread spell trouble. Snow tires or reliable chains can be economical insurance.

6 STEERING
Loose joints — any malfunctioning here—mean less control of today's higher-powered cars. Off-balance wheels will shimmy, adding treachery to icy driving.

7 WINDSHIELD WIPERS
Seeing, the first essential in avoiding danger, is only assured if defroster, wiper, wiper blades are working properly. Clean, uncoated windows help, too.

8 GLASS
Cracks, discoloration and other windshield and window defects show up in too many inspected cars. And dangling window curios add nothing to transparency.

9 HORN
Good drivers, alert, avoid horn-honker emergencies, but the horn was put there for a purpose, ought to work. A surprising number prove dead or weak on test.

10 REAR-VIEW MIRROR
Danger may approach from the rear as well as from the sides or front. In fact, this is a mirror to check every time before a start, stop or turn.

11 BATTERY
This "heart" of the electrical system is winter-sensitive; voltage drops with the mercury. Checks needed: liquid level, charge, connections, corrosion.

12 IGNITION SYSTEM
This is the all-important tune-up area for safer, unharried winter driving — points, spark plugs, automatic choke, voltage regulator, heat controls.

13 COOLING SYSTEM
Adding the anti-freeze is now almost automatic with most car owners, but it can be forgotten or neglected. First, system should be cleaned and flushed out.

fully developed an overall accident prevention program including such essentials as standard driver licensing and examination, accident reporting, a program for highway construction and improvement, competent traffic engineering and education, all backed by efficient enforcement.

In operation, statutory inspection may be vulnerable to political abuses, it encroaches upon private enterprise if it uses publicly-owned inspection stations and garages, the costs of repairs must be fairly set and regulated, and there must be adequate enforcement. Some authorities feel the inspection-fee money might better be used for enforcement of traffic and safety laws.

Periodic inspection started in 1927 when, by proclamation, governors of three states—New York, Massachusetts and Maryland—included vehicle inspection in their "Save-a-Life" campaigns.

At present 19 states and the District of Columbia are listed as having an inspection program, and four of those states are reported without funds for the job.

Meanwhile, in any state, a safe, properly cared-for automobile is a substantial and direct moral responsibility of the owner and operator, as well as just good American sense for every driver. Even a Gates-wild gambler shouldn't take a chance on anything less. ⊙

TOO MANY DANGER-SPREADING VEHICLES

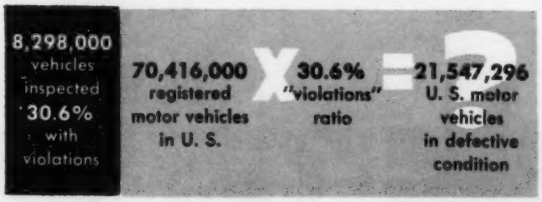
Periodic Motor Vehicle Inspection—1958

State	Vehicles Inspected	VIOLATIONS Brakes	Head-Lights	Rear Lights	Exhaust Fuel Systems
D. of C.	193,000	29,900	34,500	33,500	11,600
Virginia	1,365,000	545,000	378,000	498,000	147,000
N. J.	2,285,000	460,000	560,000	418,000	65,200
West Virginia	587,000	85,000	93,600	93,600	5,500
Delaware	163,000	16,100	14,600	18,900	3,100
Colorado	855,000	136,000	225,000	86,600	75,200
Massachusetts	1,694,000	169,000	119,000	322,000	745,000
New Hampshire	233,000	31,100	36,200	36,100	13,500
Vermont	138,000	64,500	75,600	55,400	42,500
Maine	343,000	113,000	1,400	20,900	17,800
Utah	442,000	72,800	95,500	66,500	22,100
Totals	**8,298,000**	**1,722,400**	**1,633,400**	**1,649,500**	**1,148,500**

2,542,300 motor vehicles, 10 states and D. C., with one or more violations.

30.6% of 8,298,000 vehicles inspected.

Comparable figures not available for nine other states having periodic inspection laws.


8,298,000 vehicles inspected 30.6% with violations
70,416,000 registered motor vehicles in U. S.
X
30.6% "violations" ratio
=?
21,547,296 U. S. motor vehicles in defective condition

Mounting fire toll on lumberyard sites calls for concerted preventive action.

BIG BAD BONFIRES

ENGLISH TEACHERS in a Baltimore school got an unusual chance to play detective recently when a nearby lumberyard caught fire, destroying $100,000 worth of property.

Arson investigators, convinced that the fire had been set, went to the school and asked that students be assigned to write themes on "The Recent Fire in Our Neighborhood." A 13-year-old boy turned in a gem, so full of eyewitness details that he was called in for questioning. He confessed that he and a companion had started the fire accidentally while playing with matches among the lumber piles.

Failure to guard against trespassers and other hazards burned up more than 1,800 lumber and coal yards last year alone, with the loss exceeding $17 million. Because of the conflagration nature of lumber fires, many of them did enormous damage to neighboring property as well.

Following a recent rash of lumber fires in New York City, the fire commissioner ordered dealers to clean up fire hazards or close their yards. Other aroused communities have forced lumber

National Fire Protection Association

dealers to pull up stakes and move—yet the community is often as much to blame for the bad lumber yard fire record as the yard owner.

Adoption and strict enforcement of standards worked out by the mutual insurance industry and the National Fire Protection Association could prevent hundreds of lumber fires, and drastically reduce the losses from those that do occur. Individual lumberyards have been demonstrating the workability of these loss prevention practices for more than half a century, but few cities have made any serious attempt to apply them uniformly to all yards.

The first step is full awareness by both yard owners and city officials that a lumberyard is inherently vulnerable to fire. The buildings usually are large, undivided wooden structures, loaded with power equipment and generously supplied with fast-burning materials. This helps make lumberyards peculiarly subject to incendiarism—perhaps more so than any other kind of property. Firebugs seem to find a spectacular lumber fire particularly satisfying, and several cases have been reported in which burglars set fire to yards in an attempt to cover up robberies. An official of one of the Lumber Mutuals told the *Journal*, "Incendiary fires have been our top-dollar cause of lumberyard losses recently. In the past two years, we have paid out more than $2 million for fires of incendiary origin."

Mutual Methods Head Off Lumberyard Fires

How can the yard owner and the community guard against these hazards? Here are some of the answers, based on more than 60 years of mutual insurance experience in lumberyard loss prevention:

1. Keep out trespassers. A lumberyard is an irresistible attraction to children, who like to play among the lumber piles and perhaps sneak a smoke. Couples park there, and tramps congregate to cook their mulligan stew. To keep out these unwanted visitors, insurance experts recommend that the yard be enclosed by a seven-foot woven wire fence topped with barbed wire. A watchman should be provided nights, weekends and holidays. Floodlights and watchdogs give him cheap and efficient assistance.

American Lumberman Magazine

Bad housekeeping like this could lead to a disastrous blaze from carelessly thrown cigarettes, grass fires, or sparks from furnaces and leaf burnings. Sawdust collecting in brush-type electric motors is another hazard in badly-kept yards.

2. Build safety into the yard by spacing out the buildings and lumber piles so a fire won't spread to the entire property. Masonry fire walls help protect adjoining buildings.

3. Electrical wiring and equipment, the most frequent source of lumberyard fires, should be made and installed in strict compliance with NFPA and Factory Mutual Laboratory standards and inspected frequently by qualified electricians who know the National Electric Code.

Mutual Investigation Bureau

Out-of-town newspaper, found at scene of a lumber fire in New Ross, Indiana, tripped a firebug when it was traced to his boarding house. It was the only copy in town. Mutual Investigation Bureau aided local authorities in solving the case.

Inadequate water supplies contributed to the $400,000 loss in a fire which began in a lumber shed at Massapequa, New York. Nearest hydrant was 1,000 feet away. Most probable cause was smoking, although yard was open to trespassers.

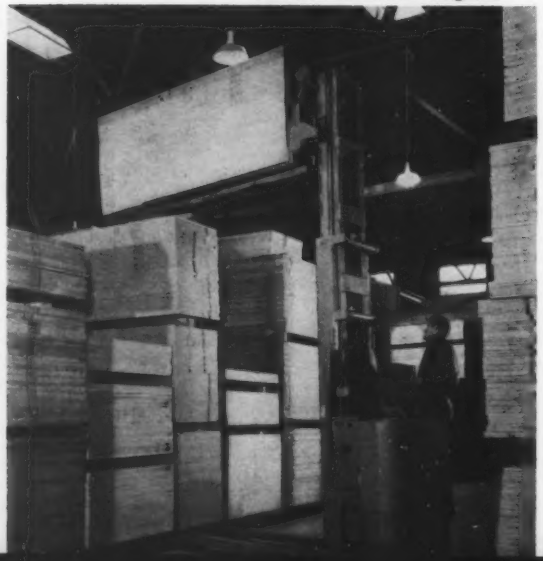
American Lumberman Magazine

Adequate fire fighting equipment, well marked and well maintained, is a must for a fire-safe yard. Experts recommend laying water mains inside the yard for maximum protection.

Edward Hines Lumber Company

Clean yard at Evergreen Park, Illinois, has neatly-stacked lumber piles, modern building and a man-high fence to minimize fire danger. Distance helps protect adjoining homes.

American Lumberman Magazine



Use of power equipment often results in better housekeeping and lower insurance rates because it requires neatness, wide aisles, hard surfaces. Also note sprinklers, vented ceilings.

4. Good housekeeping is a must. Keep trash and scrap lumber away from buildings and fences, and use weed killers to prevent the spread of grass fires. Lumber should be stacked solid in piles not more than 20 feet high.

5. Buildings containing more than 7,500 feet of floor space should be divided by standard fire walls and doors. Sprinklers and ceiling vents that open automatically to let heat and smoke escape will help keep the fire localized.

6. Instruct all employees to call the fire department immediately in event of a fire, no matter how small. Make sure the yard is provided with adequate fire fighting equipment, and that workers know how to use it.

Safety Steps Lower Fire Insurance Costs

In addition to these steps, which, incidentally, will cut his insurance cost as much as 75 per cent, the yard owner can legitimately appeal to the community for help in several ways. He can get the city fire department to inspect the yard and work out a specific fire fighting plan for it—what equipment to use, where water supplies are located, and whether the fire departments of neighboring towns should help.

If the yard is small and cannot afford a watchman, the owner can go to the chief of police and ask that a patrol car pass by the premises regularly to discourage trespassers.

In all these efforts, the yard owner and city officials can count on the co-operation of the mutual insurance industry, which provides regular inspections and advice on how to clean up hazards as part of its insurance service. When a fire of suspicious origin occurs, the services of the Mutual Investigation Bureau are available free to help pinpoint the cause and solve the case. The Bureau believes the knowledge that a fire will be investigated discourages arson.

Now, as always, mutual insurance operates on the principle that the best fire insurance is the kind that prevents the fire from starting in the first place. ⊙

MEN AGAINST THE UNKNOWN

FOR INSURANCE of survival and safe return, the seven astronauts training to be the first Americans in space have a heartening example in the Navy.

Twenty-seven days in a one-man life raft is the record established by a misfortuned Navyman who resorted to the water skills and survival techniques taught at the U. S. Naval Air Station, Pensacola, Florida.

Even under arctic conditions, in 268 aircraft accidents, 75 per cent of the men with survival training managed to live through the incidents.

The secret, if there is one, could well be in the admonition of Benjamin Franklin, one of the two founders of the U. S. Navy and father to mutual insurance: "Doubt whom you will, but never yourself."

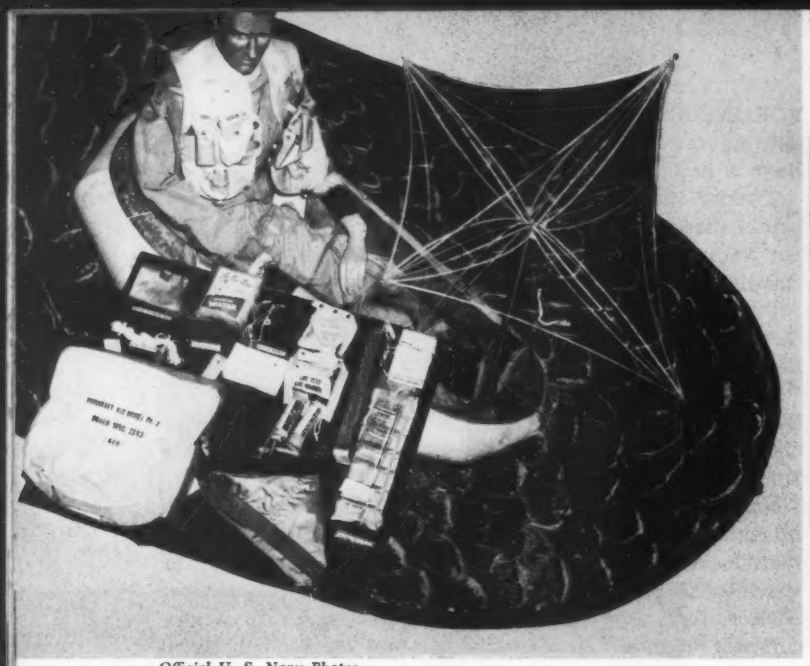
Naval aviators having lost their airplane through some mishap are, indeed, on their own. But now "their own" includes the insurance and self-confidence inherent in the intensified survival training they have had in escape, shelter, food procurement, and navigation by map and compass until they are rescued or get back themselves.

Today, as one example, the loss of pilots who fail to escape from their cockpits after a crash into the ocean is negligible as a result of survival training in the Dilbert Dunker. Yet there was a time, prior to 1943, when 95 per cent of the Navy pilots who went down over water were fatalities.

In Dilbert the student aviators get the first feel of the stick—and the first shock of what it is like to survive an aircraft accident over water. The Dunker itself is a cockpit replica suspended several feet above a large indoor

A fatal "unknown" no longer haunts downed naval airmen, thanks to training they get in this Dilbert Dunker. There was a time when 95 per cent of Navy pilots who went down over water were fatalities; survival training has cut the loss almost to nil.

"Lost" naval airmen have ample survival insurance for getting back.



Official U. S. Navy Photos

Navy life raft and survival equipment, in model form, in which downed naval airmen have survived for as long as 27 days. These survival-insurance items include water bag, desalter, solar still, food rations, signal mirror, distress flares and a life preserver.

Prevention is stressed as the best cure. But for any emergencies which may arise the student airmen are drilled on accepted methods of treating injuries and diseases, if necessary with only makeshift material.

Men Against the Unknown

swimming pool and operating on a pulley system. With the student in the cockpit, wearing complete uniform and parachute, the apparatus flies down rollers at 25-knot speed, dunking itself and the pilot upside down in the pool.

For the crash the student is taught to brace his head against the head cushion, his feet against the rudder pedals, hold the stick in his right hand and throw his left hand across his face.

Seven steps must be mastered in escaping from the cockpit, upside down, under water: (1) open eyes, (2) open safety harness, (3) grab windshield, (4) pull down deeply, (5) level off, (6) swim away at a 45 degree angle, (7) surface.

But to demonstrate that he has survived correctly, the student must still loosen his parachute, which contains his survival kit, inflate his life jacket and inflate the life raft to which he attaches the chute. Then, upon sliding into the raft in good survival fashion, the student is "checked out" in the Dilbert Dunker. Most students must go through the simulated crash several times to master it.

Helicopter rescue and parachute landing in water are also part of the survival training.

Other phases of the survival training may be less exciting than the Dunker but are no less important. In all, there are six hours of classroom instruction, 11½ hours of field exercises and a three-day field trip to Eglin Reservation to put the students' learning to test.

For insurance of their general health and welfare in a survival crisis, the students are classroom-drilled on keeping themselves, their camp and equipment clean, on purifying water, avoiding poisonous plants, insects and snakes, and on the preservation of food.

Use of improvised equipment—natural materials, the parachute and salvaged parts from the down aircraft—is stressed as a major feat in surviving and living to tell about it. The parachute takes on added prestige as improvised shelter. Propped up, an overturned, inflated life raft makes a good lean-to or it can serve as an excellent mattress if an overhead shelter is already available.

A downed pilot who has never before camped out in the wild can build a fire for warmth, cooking and signaling, can construct shelters, procure natural food and practice land navigation after he has been through the field exercises.

Survival travel through swamps, or wherever, requires that the airmen know where they are, have a means of setting and maintaining a course, have suitable clothing and equipment, have physical stamina, have a source of food, have fuel and shelter.

Rattlesnakes and other reptiles — useful, dangerous or harmless — are part of the facilities for the survival training. Rattlesnake steak, for example, may be the vital life saving food for the airman — if his strike is first.

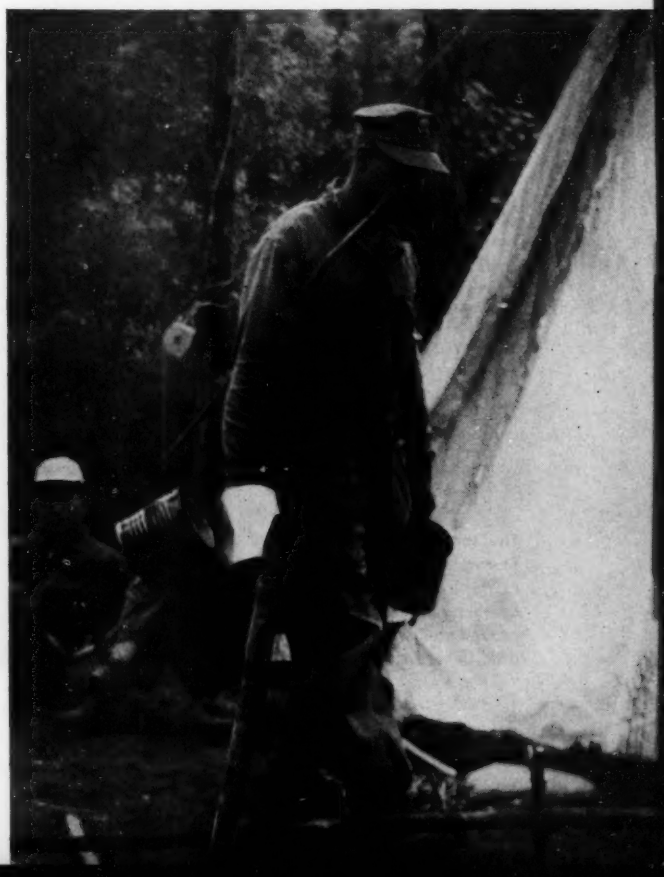
The five-point survival insurance, before attempting to travel, is: know where you are, have a means of setting and maintaining a course, have physical stamina, have suitable clothing and equipment and have sources of food, fuel and shelter.

Survival and travel in enemy territory are practiced during the three-day field trip. For the long, arduous trek through the woods and swamps, each "survivor" is issued a topographical map of the area, a machete kit, sheath knife, entrenching tool, emergency rations to last three days and a sail needle. Three parachutes and one first aid kit are issued to each unit of nine students and one instructor.

For three days and nights "this is it." Traps and snares are set for a meal's food. Bathing and shaving every night are mandatory. By compass alone, the student travels a five-mile triangular course that he has worked out. On a 15-mile hike, the survival rudiments of route finding, trail discipline and evasion techniques are mastered.

Out of the course finally emerge future naval aviators, well stocked with training, ingenuity and the will to live, ready for what Alfred Tennyson called "nature red in tooth and claw." ⊙

When survival is in the balance, the essential shelter, fire and food can be improvised from natural materials, the parachute and salvaged parts from the downed aircraft. This three-pole-teepee cloth was once a chute.



Massive doors, security-checked personnel and all such safeguards developed in the safe-deposit operations of banks are the rule with the underground vault companies. Also, office space is saved with microfilming and vault-storage of records. Incinerator service is furnished for obsolete records.

Western States Atomic Storage Vaults, Inc.

WORLD'S SAFEST STRONGHOLDS

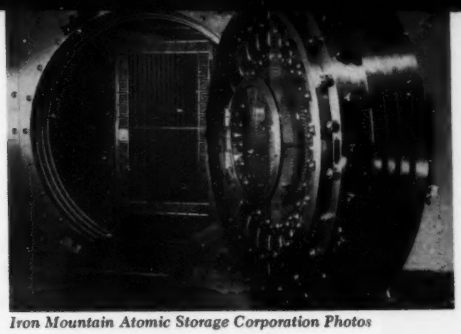
An inside look at three "Forts Knox" for U. S. business valuables.

Western States Atomic Storage Vaults, Inc.

Sealed at each end with reinforced concrete, this old mountain railroad tunnel made Western States' atomic vaults of 100,000 cubic feet, 214 feet long and 23 feet high. Interior is weather-controlled stronghold deemed not vulnerable from the military standpoint; site is isolated mountain area.

National Storage Company, Inc.

This three-ton steel portal gate guards National Storage's entrance, which can handle even largest tractor-trailer. Distance from roadbed to top of overhanging rock formation is 110 feet. Underground vaults are one-fourth mile from this portal gate, where armed guards are always on duty.



Iron Mountain Atomic Storage Corporation Photos

Guarding the entrance to Iron Mountain's vaults is a 28-ton time-lock door (left), heavier than the gold-guarding door at Fort Knox. Cutaway model of vault system (below) shows the protective overlay of ore ranging in depth from 75 to 150 feet.

COME WHAT MAY in this uneasy world, there are at least three caverns in the U. S.—and unknown numbers of secret ones—where anything from a family keepsake to a company's future can be stored in an impregnable fortress.

These three strongholds—from East to West—are the Iron Mountain Underground Vaults, Hudson, New York; National Storage Company, Inc., near Pittsburgh, Pennsylvania, and Western States Atomic Vaults, Inc., near San Francisco, California.

Iron Mountain utilizes an 85-year-old rock-hewn abandoned mine of an ore and iron company; National Storage is deep in the 23-foot vein of an old limestone mine, and Western States is a veritable fortification fashioned out of an old railroad tunnel in the Santa Cruz mountains.

Powerfully reinforced as they are and protected with blanket insurance covering liability and property damage, these vaults are about as near as humans can get to the ultimate in security against every known hazard—intercontinental missiles, enemy atomic attack, fallout, sabotage, fire, flood, earthquakes, explosions, tornado, theft or mildew.

One vault door alone is heavier than the one guarding the nation's gold reserves at Fort Knox. Not even a master-invader from outer space is likely to crack the security safeguards

of these various vaults—reinforced steel and concrete construction, alarm systems of all kinds, air conditioning and humidity control, standby electric power, assured water supply, reserve food stocks, around-the-clock guard service, security-checked employees, private underground communication lines for connections with any business office or factory in the U. S., and in some cases living accommodations for key management personnel.

Insurance companies are among the major depositors. Western States, just as one example, has one insurance company with an entire compartment for its microfilm and IBM cards and its own sorter. As a group, the depositors have made these vaults the "Fort Knox" for the nation's vital business and personal records, documents, valuables, plans and instruments.

There are even business survival facilities whereby any company, regardless of size or geographical location, could reconstruct its financial or physical position within 24 hours—come what may. ⊙

National Storage Company, Inc.

"Peace" trickery is warned against by vault officials. This company, from its mountain-strong office, quotes the veiled warning of Khrushchev himself, September '55, "If anyone believes our smiles mean abandonment of the teachings of Marx, Engels and Lenin, he is deceiving himself cruelly. Those who wait for that must wait until the shrimp learns to whistle."

Far from being cramped, as might appear here, vaults of National Storage cover some 80 subterranean acres, with living accommodations for a business firm's key management personnel in case of emergency. Aisles separating storage files and vaults may be as long as 410 feet. Companies find one-level storage reduces cost.

F. Britton McConnell, former mayor of Beverly Hills and present commissioner of a $2½ billion state insurance industry.

CLOSE-UPS OF OUR COMMISSIONERS

CALIFORNIA'S McCONNELL

GIVE HER CREDIT: California has made good!

Seventy years ago, historian Hubert Howe Bancroft predicted shining achievements in all fields for his adopted state "when there are hands enough for the work to be done, and consumers enough for its products."

Today, with 6 million workers and $35 billion in annual personal incomes, California has realized a brilliant diversity that defies "thumbnail" description. Suffice it to say the Redwood State stands among the nation's leaders whether the subject be missiles or missions, forests or factories.

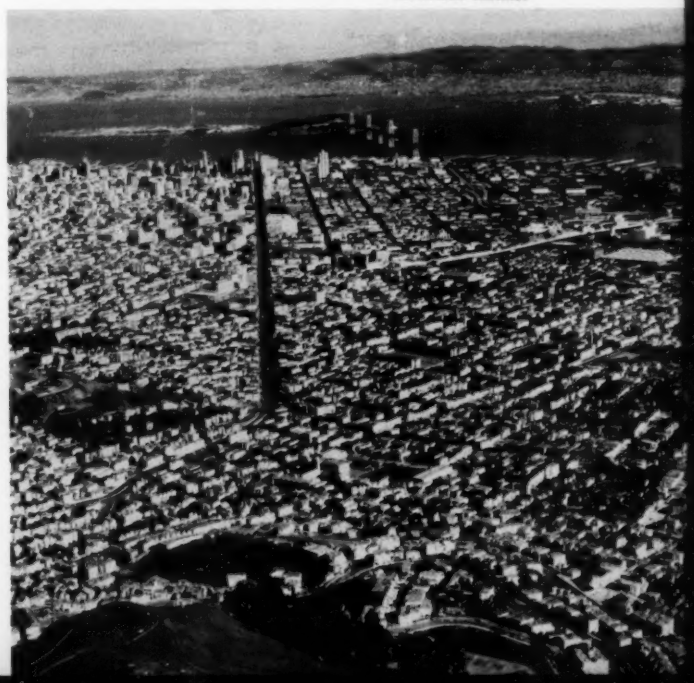
Fifteen million strong, Californians claim the fourth highest per capita income in the nation, around $2,500. Liquid assets held by firms and individuals—estimated at $26.4 million—account for almost 10 per cent of the U. S. total, about the same proportion as the state is credited with in the nation's overall manufacturing output.

Although less than five per cent of its residents live on farms, California consistently leads the country in cash income from agriculture—a feat, authorities report, achieved through irrigation and by making the state "almost into one huge reclamation project." In tune with their foresight and success in farming and conservation endeavors, Californians also show tomorrow-consciousness in their $2½ billion insurance industry.

Growing in step with the economy, the fire and casualty branch of the business accounts for more than $1½ billion in direct premiums annually, second highest nationwide. Mutual firms' last reported two-year premium increase was 35.7 per cent, while stock companies recorded a comparable 22.5 per cent climb.

Annual taxes paid by some 668 insurance firms operating in the state amount to more than $46 million, reports the California Insurance Department. At its head: F. Britton McConnell, first appointed commissioner by Republican Governor Goodwin J. Knight in 1955 and this year named to continue in the post by Democratic Governor Edmund G. Brown.

Born in New Orleans, Commissioner McConnell moved to Los Angeles during high school days, attended the University of California and took his LL.B. degree from Hastings College of the Law. In World War I, he served in a machine-gun company of the U. S. Army's 91st Division.

Married in 1925, McConnell has two sons, attorneys in his home state today. A former city councilman and mayor of Beverly Hills, he belongs to numerous bar associations, the California Club, the 91st Division Association and San Francisco's Olympic Club. ⊙

San Francisco, home of the world's largest bank and longest swimming pool, looking up busy Market Street toward Oakland.
American Airlines